REMARKS

Claims 1-13 are pending in the present application. Claims 7-9 are withdrawn from consideration. Claim 12 is herein amended. Claim 13 is newly added. No new matter has been entered.

Claim Rejections - 35 U.S.C. §§ 102 and 103

Claims 1, 2, 4 and 12 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over **Wolski** (U.S. Patent 5,834,140); claims 1, 2, 4 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over **Wolski** in view of **Fatcheric** (U.S. Patent 5,679,230); and claims 3, 5, 6, 10 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over **Wolski** in view of **Fatcheric**.

Favorable reconsideration is requested.

A. Rejection based on Wolski

Applicant respectfully submits that Wolski does not teach or suggest:

> An electrodeposited copper foil, comprising:
>
> a matte side surface, said matte side surface having a surface shape that is smooth with intermittently spaced ***knob-like projections***;
>
> wherein the surface roughness thereof is 2.2 to less than 4 μm, and the copper foil is ***an untreated copper foil***

as recited in claim 1.

Applicant previously pointed out that Wolski does not disclose knob-like projections on an untreated copper foil. (Amendment, September 26, 2007.) Specifically, Applicant stated that the Office Action incorrectly compares the deposited copper nodules of Wolski to the knob-like

projections of an untreated copper foil since an untreated copper foil does not have deposited copper nodules. Furthermore, Applicant pointed out that the limitation "untreated copper foil" should be given patentable weight since the cited copper foil having deposited nodules in Wolski is structurally distinguishable from an untreated copper foil.

The Office Action dated October 24, 2007, maintains that the limitation reciting that the copper foil is an untreated copper foil is a process limitation which is given no patentable weight, and maintains that the copper nodules deposited in a treatment process in Wolski correspond with the "knob-like projections" as recited in claim 1. (Office Action, pages 7-8.)

However, as previously pointed out, the Office Action incorrectly gives no patentable weight to the limitation "untreated copper foil." The MPEP states that:

> The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product.

MPEP § 2113, citing *In re Garnero*, 412 F.2d 276 (CCPA 1979).

The Office Action appears to assume that the only structural difference between a treated and an untreated copper foil is the surface roughness characteristic. However, an untreated copper foil also does not have deposited copper nodules. Deposited copper nodules are the result of a treatment process. Wolski at col. 3, lines 18-24 states:

> Among these ***treatments***, there is a ***process of depositing copper [n]odules*** on the surface of the foil for enhancing bonding strength of the foil when it is laminated to an insulating resin substrate. This process is called to as a ***bond enhancing treatment.*** The copper foil subjected to the

> above treatments is called a ***treated copper foil*** 8 and can be used for a copper-clad laminated board.

(Emphasis added.)

Thus, the cited copper foil having deposited copper nodules in Wolski is structurally distinguishable from an untreated copper foil as recited in claim 1.

Since an untreated copper foil does not have deposited copper nodules, the Office Action incorrectly cites the deposited copper nodules in Wolski as corresponding to the "knob-like projections" of the copper foil as recited in claim 1.

Wolski does not teach or suggest an untreated copper foil with knob-like projections. Therefore, Wolski does not teach or suggest the elements as recited in claim 1.

Regarding claim 12, Applicant respectfully submits that Wolski does not teach or suggest a copper foil as recited in claim 1 wherein the electrolyte for producing the copper foil contains sodium 3-mercapto propoane sulfonate and hydroxyethylcellulose.

The Office Action specifically cites the copper foil of comparative example 1 in Wolski as corresponding with the copper foil as recited in the present claims since comparative example 1 is a copper foil that has a surface roughness of 3.3 μm before treatment. (Office Action, page 3.) However, as can be seen in Table 1 of Wolski, the copper foil of comparative example 1 was not produced using either 3-mercapto propane sulfonate or hydroxyethylcellulose. Therefore, Wolski does not disclose the elements as recited in claim 12.

B. Rejection based on Wolski in view of Fatcheric

The Office Action acknowledges that Wolski does not explicitly teach intermittently spaced projections. (Office Action, page 5.) The Office Action cites Fatcheric for disclosing a surface shape that is smooth with intermittently spaced knob-like projections. (Office Action, page 5 citing Fatcheric, Abstract.) Specifically, the Office Action cites the fine nodular metal deposit of Fatcheric for disclosing the intermittently spaced knob-like projections.

Fatcheric discloses that the fine nodular metal deposit is the result of a treatment process. Fatcheric states:

> In one aspect, the invention is an electrolytically formed copper foil ... which has been ***electrolytically treated*** on the matte side ***to deposit micro nodules*** of a metal or alloy, preferably copper or a copper alloy, which do not increase the measured roughness, but nevertheless do increase adhesion to a substrate.

(Col. 3, lines 11-17, emphasis added; *See also* Abstract.)

Thus, the Office Action cites fine or micro nodules in Fatcheric which were deposited on the copper foil in a treatment process for corresponding to the intermittently spaced knob-like projections on an untreated copper foil as recited in claim 1.

As stated above regarding the rejection based on Wolski, an untreated copper foil does not have deposited copper nodules. Knob-like projections of an untreated copper foil cannot correspond to deposited copper nodules since deposited copper nodules on a copper foil are structures formed by a treatment process.

Neither Wolski nor Fatcheric teach or suggest an untreated copper foil with knob-like projections. Therefore, Wolski in view of Fatcheric does not teach or suggest the elements as recited in claim 1.

New Claim

Claim 13 recites that the untreated copper foil does not have deposited nodules. This claim further distinguishes the present invention as recited in the claims from Wolski and Fatcheric. Claim 13 structurally defines an untreated copper foil as not having deposited nodules.

Neither Wolski nor Fatcheric disclose an untreated copper foil having knob-like projections and not having deposited nodules.

For at least the foregoing reasons, claims 1, 12 and 13 are patentable over Wolski and Wolski in view of Fatcheric, and claims 2-6 and 10-13 are also patentable by virtue of their dependence from claim 1. Accordingly, withdrawal of the rejection of claims 1-6 and 10-12 is hereby solicited.

In view of the aforementioned amendments and accompanying remarks, Applicant submits that that the claims, as herein amended, are in condition for allowance. Applicant requests such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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